PUBLIC NOTICE

File Number: NRS 15.350

Pursuant to Chapter 0400-4-7 of the Department's rules, the proposed activity described below has been submitted for approval under an Aquatic Resource Alteration Permit and §401 Water Quality Certification. This notice is intended to inform interested parties of this permit application and to ask for comments and information necessary to determine possible impacts to water quality. No decision has been made whether to issue or deny this application.

APPLICANT: Stephen F. Murphy, Lieutenant Colonel
U.S. Army Corps of Engineers- Nashville District
110 9th Avenue South, Room A-405
Nashville, TN 37203
(615) 736-5626

LOCATION: The project is located at the Cumberland City By-pass Channel, Cumberland River Miles 102.0-104.5 Barkley Reservoir, Cumberland City, Stewart County; Latitude 36.3975; Longitude -87.6510.

PROJECT DESCRIPTION: The project proposes to restore navigation channel depth at the Bypass entrances to the designed channel depth of elevation (EL) 341 feet mean sea level. Approximately 375,000 cubic yards of river sediment will be dredged between river miles 102.0-104.5

Three alternatives were considered. Alternative 1 is no dredging. Alternative 2 was the previous 2012 plan to hydraulic dredge and dispose of in an upland site. Alternative 3 is the proposed action of clamshell dredge and dispose of in-river. While these alternatives maybe considered feasible, they may not be practicable. Alternative are considered practicable if they are available and capable of being done after taking into consideration cost, existing technology, logistics to meet the overall project objectives. Alternative 1 is not feasible because the channel will continue to fill with sediment restricting channel depth and width thus restriction navigation. Alternative 2 would utilize a suction dredge thereby creating increased turbidity. The proposed upland disposal would result in impacts to 30 acres of jurisdictional wetlands.

Alternative 3 is the proposed alternative. The use of a clamshell dredge and placed with split hull barges and should result in less impacts to water quality. The dredge would scoop sections of the river bottom in a grid pattern and then placed in the barges. The barges would align over an in river placement site. The split hull would open under the water surface and the sediment would drop to the river bottom. Some localized turbidity would result from the excavation and placement of the river sediment. However, the sediment would not be slurried, but remain in a more compacted state. Less suspended solids would be released during excavation than with the use of s suction dredge. No wetlands will be impacted with this alternative.

It is estimated that the proposed work will take approximately 9-120 days to complete (18-24 weeks at 5 days per week). Time of year, weather scheduling, navigation traffic impacts and funding may affect completion time. It is likely that maintenance dredging and in- river placement activities may be done in increments over a 2-3 year period to minimize dispersion.

Sediment data collected in 2007 and 2012 by the Corp of Engineers at sediment monitoring stations did not indicate that there were any contaminants in concentrations of concern. Further consultation with COE scientists at ERDC confirms that there are no contamination concerns.

The U.S Fish and Wildlife Service records do not list any the presence of nay federally listed species in the project area. No listed mussels were collected by the COE during their sampling events. The Tennessee Wildlife Resources Agency lists two fish species, the lake sturgeon and the blue sucker, for the project area. The proposed activity is not anticipated to affect either of these species. Permit details can be accessed at: http://environment-online.state.tn.us:8080/pls/enf_reports/f?p=9034:34001:6907036883770

DEGRADATION: In accordance with the Tennessee Antidegradation Statement (Rule 0400-40-03-.06), the division has determined that the proposed activities will result in degradation to water quality.

WATERSHED / WATERBODY DESCRIPTION: The proposed project lies within the HUC 05130205 Lake Barkley watershed in the Cumberland River Basin. More information can be found at
https://tn.gov/environment/article/wr-ws- lake barkley- watershed .

Ecoregion: 71g – Western Highland Rim
Stream Name / ID: TN05130205015 _1000
Designated Use Use Support
Livestock Watering and Wildlife - not supporting
Irrigation- not supporting
Fish and Aquatic Life- not supporting
Industrial Water Supply- not supporting
Domestic Water Supply - not supporting
Recreation- not supporting

PERMIT COORDINATOR: Mike Lee

FACTORS CONSIDERED: In deciding whether to issue or deny a permit, the department will consider all comments of record and the requirements of applicable federal and state laws. In making this decision, a determination will be made regarding the lost value of the resource compared to the value of any proposed mitigation. The department shall consider practicable alternatives to the alteration. The department shall also consider loss of waters or habitat, diminishment in biological diversity, cumulative or secondary impacts to the water resource, and adverse impact to unique, high quality, or impaired waters.

COMMENTING: Persons wishing to comment on the proposal are invited to submit written comments to the department. Written comments must be received within **thirty days of the date that this notice is posted**. Comments will become part of the record and will be considered in the final decision. The applicant's name and permit number should be referenced. Send all written comments to the department's address listed below and to the attention of the permit coordinator.

PUBLIC HEARING: Interested persons may request in writing that the department hold a public hearing on this application. The request must be filed within the comment period, indicate the interest of the person requesting it, the reasons that the hearing is warranted, and the water quality issues being raised. When there is sufficient public interest in water quality issues, the department will hold a public hearing. Send all public hearing request to the department's address listed below and to the attention of the permit coordinator.

APPEAL: A permit appeal may be filed, pursuant to T.C.A. §§ 69-3-105(i) and Rule 0400-40-05, by the permit applicant or by any aggrieved person who participated in the public comment period announced by this notice. This petition must be filed within THIRTY (30) DAYS after public notice of the issuance of the permit. The petition must specify what provisions are being appealed and the basis for the appeal. It should be addressed to the technical secretary of the Tennessee Board of Water Quality, Oil and Gas at the following address: Tisha Calabrese Benton, Director, Division of Water Resources, William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Ave, 11th floor, Nashville, TN 37243. Any hearing would be in accordance with T.C.A. §§69-3-110 and 4-5-301 et seq.

FILE REVIEW: The permit application, supporting documentation including detailed plans and maps, and related comments are available at the department's address (listed below) for review and/or copying.

Tennessee Department of Environment & Conservation
Division of Water Resources, Natural Resources Unit
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243

becomes more lake-like. The sediment composition is dominated by silt and detritus but it contains a noticeable amount of fine sand and some clay.

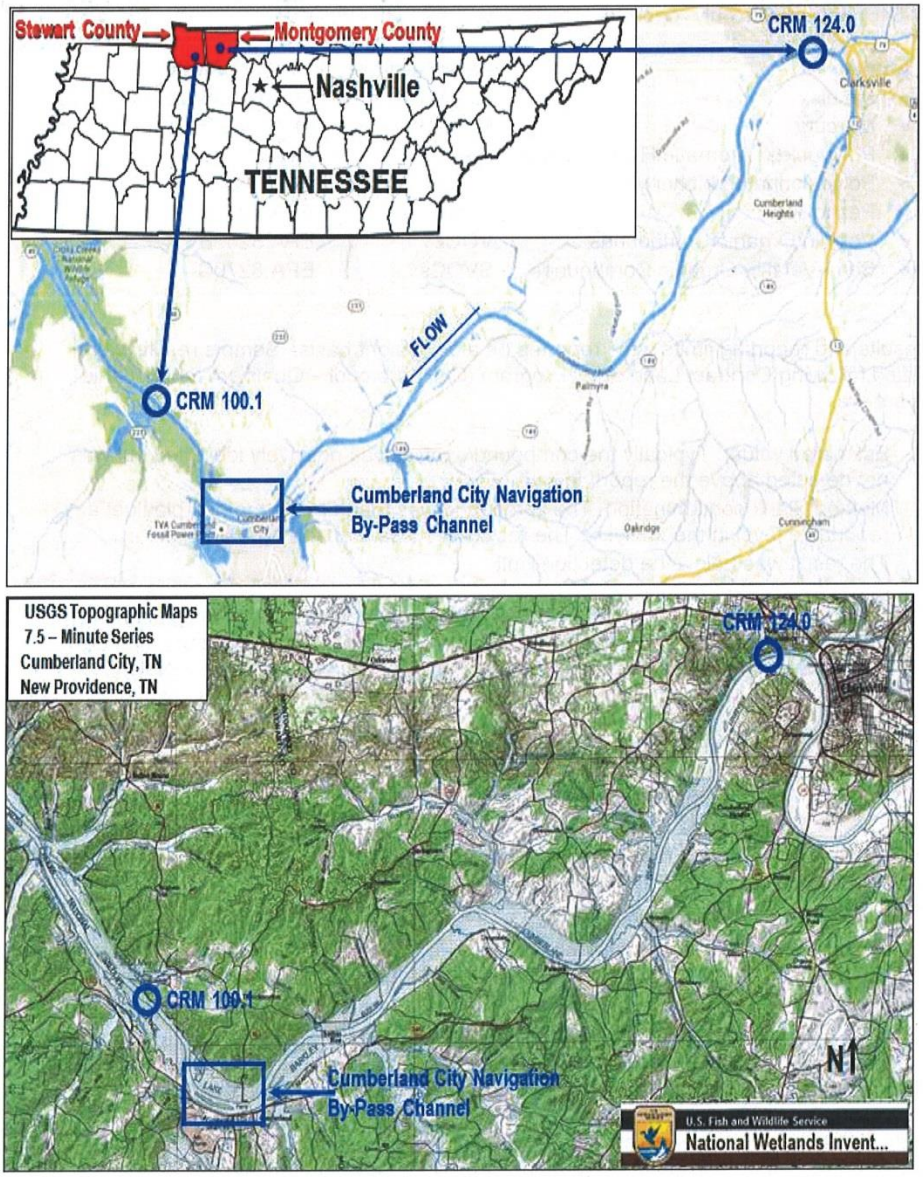

Figure 1. Corps Water Management Monitoring Stations CRM 100.1 and CRM 124.0.

6.2 USGS topographic map indicating the exact location of the project

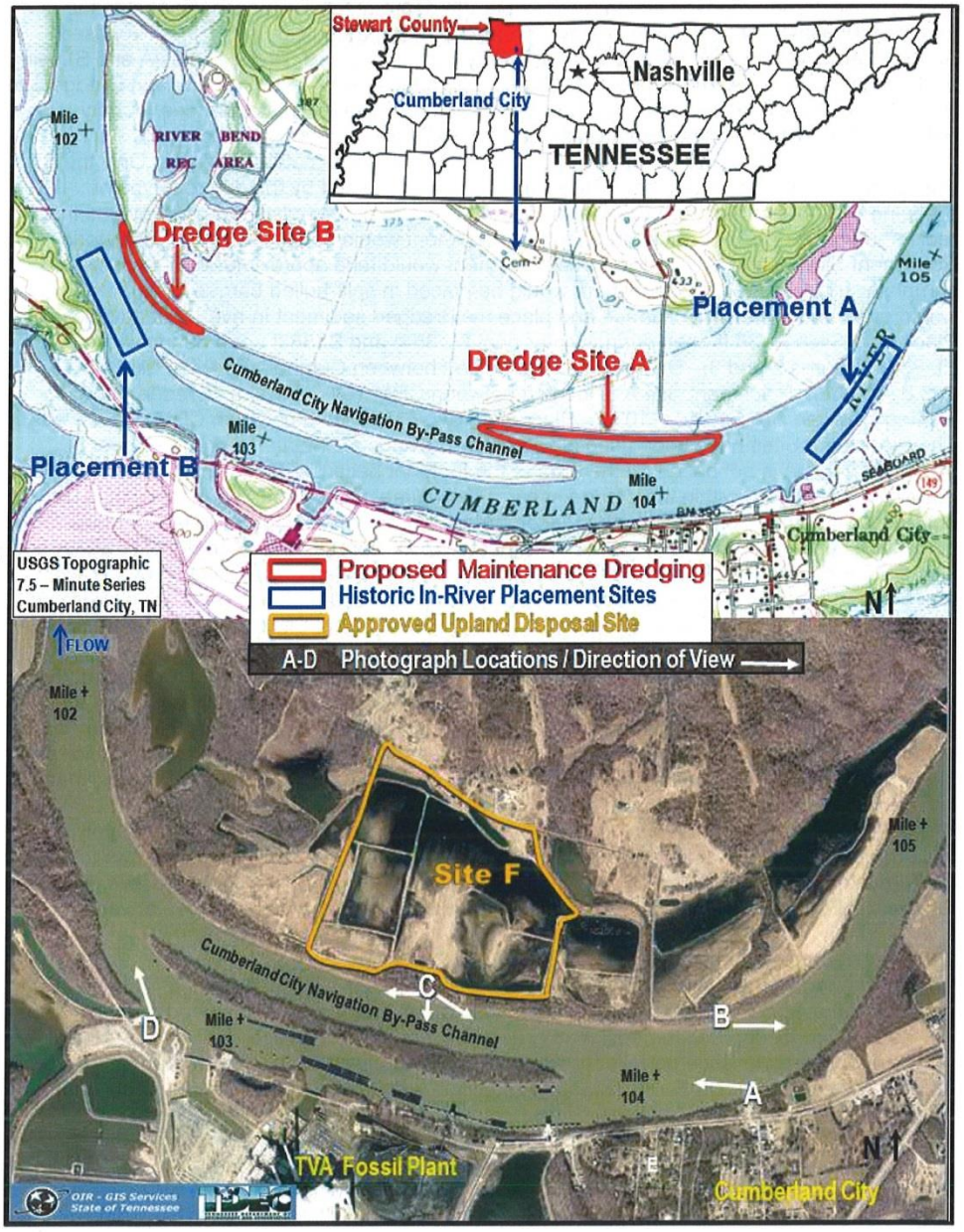

Figure 1. Project Vicinity Map and Photograph Locations.

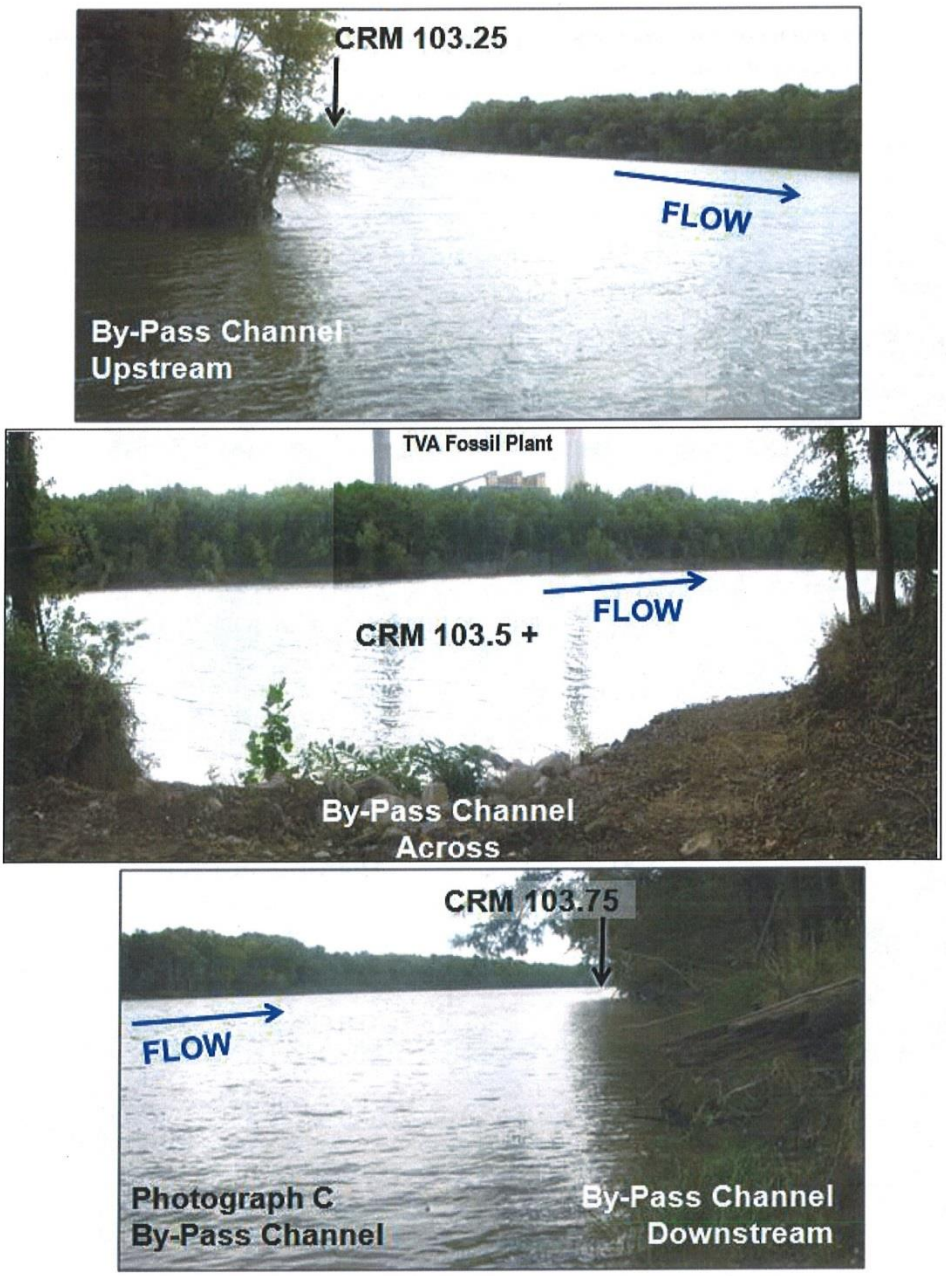

Figure 5. By-Pass Channel – Existing Condition, Upstream, Across, and Downstream Views

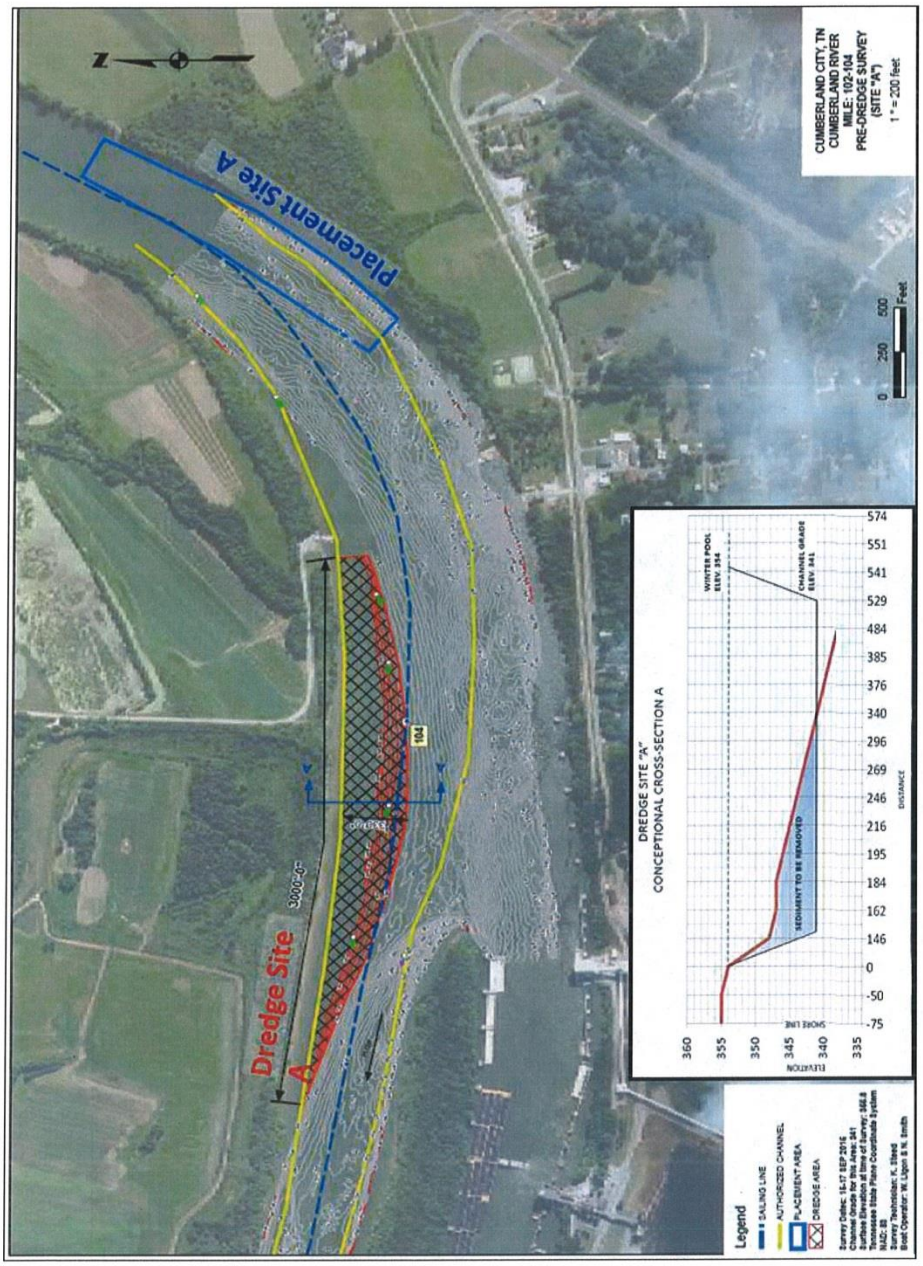

Figure 2. Dredge Site A, Placement Site A, and Channel Cross-Section.

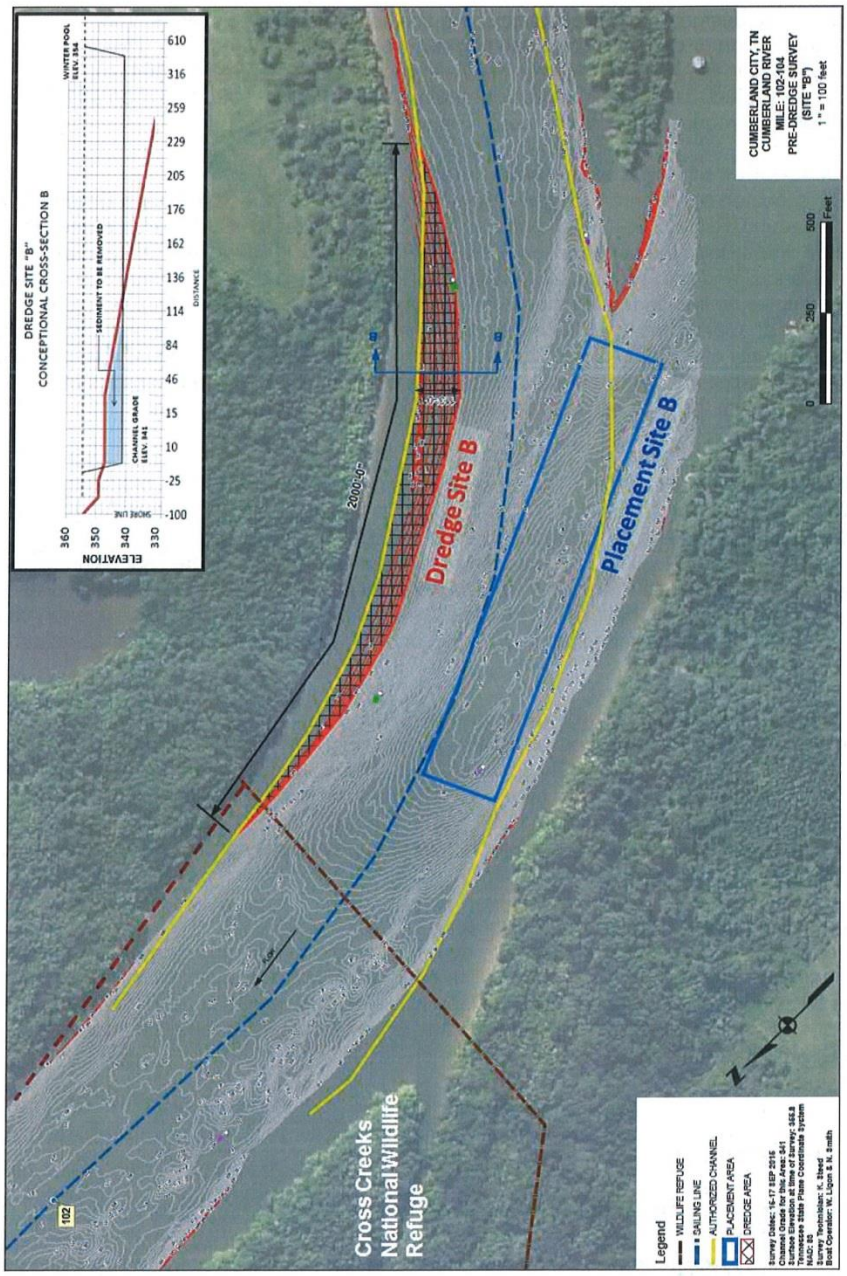

Figure 3. Dredge Site B, Placement Site B, and Channel Cross-Section

6.3 Photographs of the resource(s) proposed for alteration with location description
(photo locations should be noted on map)

An aerial view of the By-Pass with photograph locations is provided in Figure 1. River views are provided in photographs with a location description in Figures 4, 5, and 6. The proposed maintenance dredging and in-river placement would not alter the existing condition of the river and riparian corridors shown in the photographs.

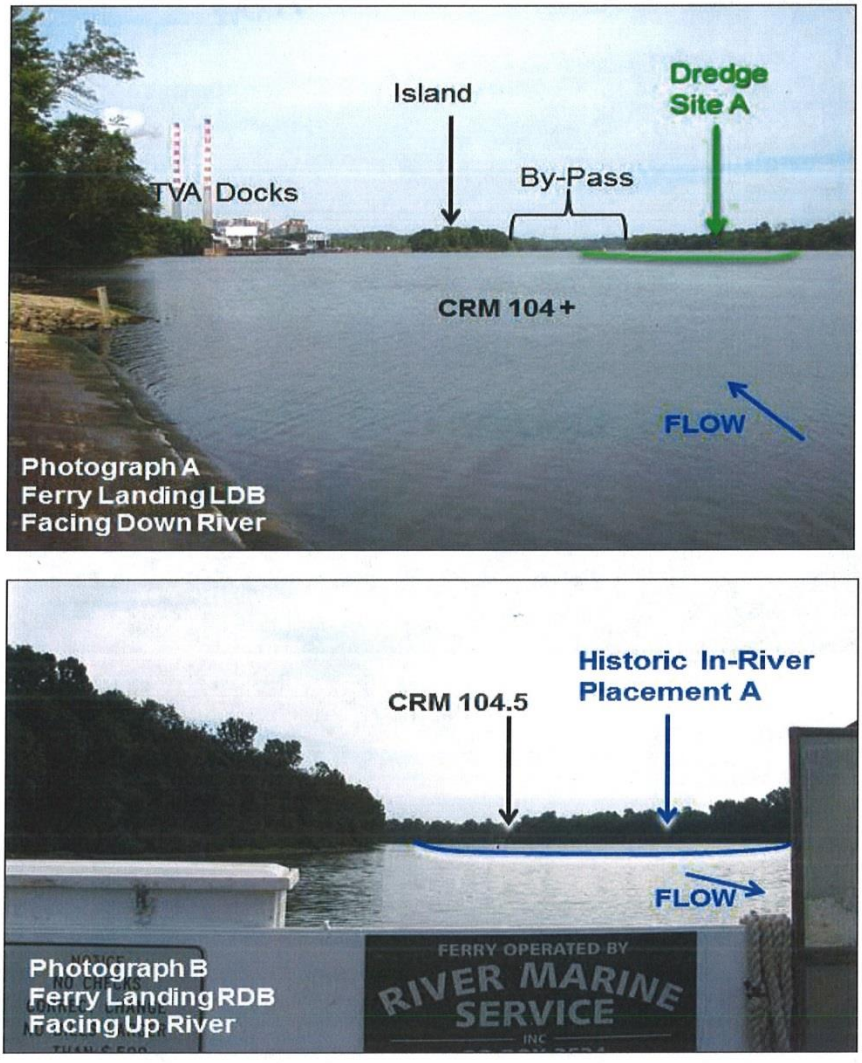

Figure 4. Cumberland River– By-Pass, Dredge Site A, and Placement Site A Locations.

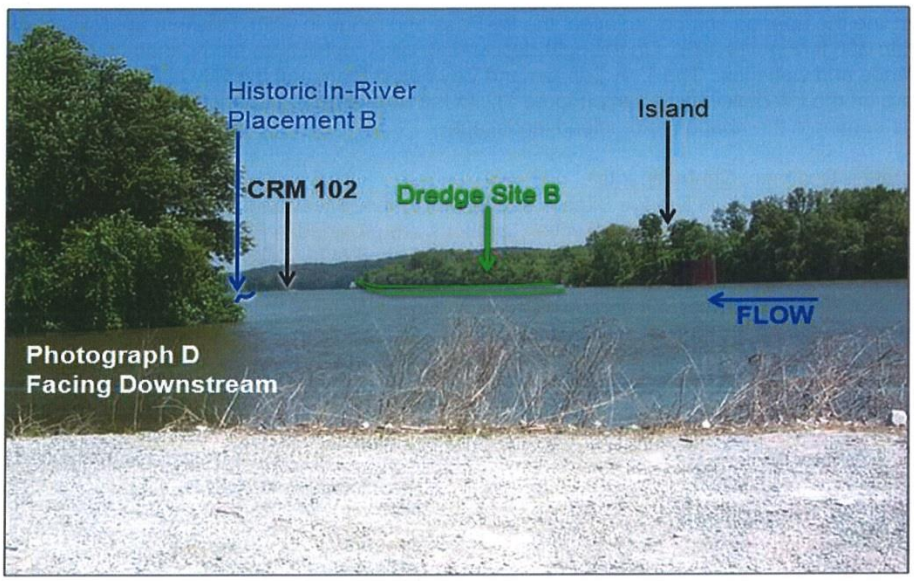

Figure 6. Cumberland River – Island, Dredge Site B, and Placement Site B Locations.

6.4 A narrative description of the existing stream and/or wetland characteristics including, but not limited to, dimensions (e.g., depth, length, average width), substrate and riparian vegetation

The By-Pass is approximately 5,000 ft (approximately 1 mile) long and 400 ft wide. The entrances extend nearly 2,000 ft and widen to approximately 600 ft at either end of the By-Pass (Figure 1). The By-Pass channel and entrance depths are designed to EL 341 (13-ft deep) at winter pool EL 354 (Figures 2 and 3). The By-Pass was excavated out of the inside bend of the floodplain in 1970 to accommodate occupation of the main river and left descending bank by the Tennessee Valley Authority (TVA) Cumberland City coal-fired (fossil) steam plant. The plant supplies approximately 8% of the electricity in the entire grid.

At Dredge Site A, the cross-section of the dredge site shows that accumulating sediment has reduced the channel width by over 50% (Figure 2). Nearly 20% of the channel is not navigable because depth is less than 9-ft draft during winter pool EL 354 (Figure 2). At Dredge Site B, the cross-section of the dredge site shows that accumulating sediment has reduced the width by approximately 30% (Figure 3). Nearly 15% of the channel is not navigable because depth is less than 9-ft draft at winter pool EL 354 (Figure 3). As the By-Pass entrances narrow and become shallower, it becomes more difficult for two tows to pass each other through the By-Pass. The last maintenance dredging and in-river disposal at these sites occurred in 2000.

Placement Site A is approximately 300 ft by 2,600 ft (18 acres). At Placement Site A, the deepest part of the river bed ranges from 32 and 38 feet deep (between EL 316 – 322 at winter pool EL 354). Placement Site B is approximately 300 ft by 1,600 ft (11 acres). At Placement Site B, the deepest part of the river bed ranges from 48 to 58 feet deep (between EL 296 – 306 at winter pool EL 354).